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ABSTRACT

A study was conducted at Morton College to determine the effect of students' sex, age, instructor, and placement test scores on grades in Rhetoric I and College Algebra during fall 1983. Study results included the following: (1) 24% of the variance in Rhetoric I grades was accounted for by a student's sex, age, instructor, and placement test scores; (2) instructor differences accounted for 11% of the variance, sex of student for 7%, placement test scores about 2% and age about 2%; (3) 33% of the variance in College Algebra grades was accounted for by the four predictor variables; and (4) instructor differences accounted for 22% of the variance, placement test scores for about 15%, and sex of student for about 7%. The study concluded that numerous factors may affect student grades, and that placement testing programs should be designed with those influences in mind. (LAL)

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AN INVESTIGATION OF THE EFFECT O SEVERAL VARIABLES ON STUDENTS' GRADES IN RHETORIC I AND COLLEGE ALGEBRA

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An Investigation of the Effect of Several Variables On Students' Grades in Rhetoric I and College Algebra

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In recent years, by instituting mandatory placement testing programs, community colleges have demonstrated their commitment to helping students select the appropriate level at which to begin their studies in disciplines such as English and mathematics. The assumption upon which these programs are based is that performance on a placement test and course grade are highly correlated. This assumption needs to be examined. Indeed, it is possible that factors other than placement test performance are better predictors of course grade. If this is the case then placement testing may add little to our ability to help students successfully select the appropriate level at which to begin their studies.

The purpose of the present investigation was to assess the effect of several predictor variables, including placement test performance, on the grades students receive in Rhetoric I and College Algebra, two of the courses for which placement testing is required at Morton College.

Method

The Nelson-Denny Reading Test (Form C) and Mathematics Test BA/2A (published by the Mathematical Association of America), are routinely given to all students completing

Morton College's New Student Orientation Program. The results of these tests are used to help students select the proper English and mathematics courses for which to enroll.

In the present study, multiple regression equations were solved to determine the effect that four predictor variables--sex of student, age of student, instructor, and placement test score--had on the Rhetoric I and College Algebra grades assigned during the 1983 Fall Semester. To be included in the study, a student had to have received a grade of A, B, C, D, or E. Data from 312 Rhetoric I and 46 College Algebra students were analyzed.

Results

Table 1 shows that 24% of the variance in Rhetoric I grades was accounted for by a student's sex, age, instructor, and placement test score. An examination of the table further reveals that a significant amount of the variance was due to the independent effect of each of the four predictor variables. With the remaining variables already in the equation, instructor differences accounted for about 11% of the variance in Rhetoric I grades, sex of student for about 7%, placement test score for about 2%, and age of student for about 2%. Although not shown in Table 1, female students tended to earn higher grades in Rhetoric I than did males, and older students generally performed better in the course than did younger students.

Table 2 is similar in nature to Table 1 and shows that 33% of the variance in College Algebra grades was accounted

Table 1. Variance in Rhetoric I Grades Due to Sex and Age of Student, Instructor, and Placement Test Score

R^2 Change Due to:	R^2 Change	df	F	p
Sex of Student	.0687	1,301	27.06	$<.01$
Age of Student	.0185	1,301	7.29	$<.01$
Instructor	.1128	7,301	6.35	$<.01$
Placement Test Score	.0192	1,301	7.56	$<.01$

Full Model:

$R = .4855$
$R^2 = .2357$
$df = 10,301$
$F = 9.28$
$p < .01$

Table 2. Variance In College Algebra Grades Due to Sex and Age of Student, Instructor, and Placement Test Score

R^2 Change Due to:	R^2 Change	df	F	p
Sex of Student	.0712	1,39	4.17	$< .05$
Age of Student	.0007	1,39	.04	n.s.
Instructor	.2235	2,39	6.54	$< .01$
Placement Test Score	.1528	1,39	8.94	$< .01$

Full Model:

$R = .5775$
$R^2 = .3335$
$df = 5,39$
$F = 3.90$
$p < .01$

for by the four predictor variables. Unlike Rhetoric I, however, only three of these variables--instructor, placement test score, and sex of student--contributed to the prediction of a student's grade in College Algebra. With the remaining variables already in the equation, instructor differences accounted for about 22% of the variance in the assigned grades, placement test score for about 15%, and sex of student for about 7% (males tended to earn higher grades in the course than did females).

Discussion

The results of the present study clearly suggest that factors other than placement test performance affect the grades that students receive in Rhetoric I and College Algebra. Specifically, instructor, gender, and age (in Rhetoric I) also seem to be important variables.

That instructors grade differently from one another comes as no surprise. Faculty members enjoy academic freedom and are able to set their own standards for assigning grades. This has been an important part of our educational tradition and should remain so in the future. However, students do have the right to expect a certain degree of consistency in the grading practices of instructors teaching the same course. In recognition of this, faculty members should meet periodically to review their grading procedures and to discuss the benefits of setting specific standards whenever possible.

Questions about gender and age and their relationship to course grade deserve further investigation. For example, what are the specific characteristics of females that tend to be associated with higher grades in Rhetoric I and lower grades in College Algebra? In addition, why do older students apparently write better than younger students? Finally, do differences in course grade attributable to gender and age warrant the use of different placement test cutoff scores for females and older students?

In conclusion, studies such as this point out the need for educators to carefully evaluate the various factors that may affect a student's grade and to design placement testing programs with these specific influences in mind. In some cases this may mean adopting multiple cutoff scores, selecting new placement tests, eliminating placement testing altogether for certain courses, or working more closely with faculty members teaching the same course to reduce apparent inconsistencies in their grading practice.

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